AquaGuard 2

Water Management Software for Remote Control of Water Treatment Programs

USER MANUAL
May 2006 Version 5.0

AQUARIUS
TECHNOLOGIES PTY LTD
WATER QUALITY CONTROL

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AquaGuard 2 Software

Congratulations

We know you will be happy with your decision to purchase a new Aquarius Technologies 2006 Generation Controller.

The AquaGuard 2 software extends the controller capabilities to allow for remote control of your controller from the comfort of your PC or latptop computer.

Once connected, the owner or manager can obtain system performance data such as Alarm status, modify the water treatment program settings, start a disinfection program remotely or download the controller data log for a full review of system performance.

An Excel spreadsheet with embedded macros swiftly imports the data downloaded to a database from where data summary, trend charts and graphs are automated to provide for rapid reporting and analysis of the data.

In this package are -

AquaGuard 2 Trial CD - software program, a fully functional version of AquaGuard 2 water management software on a 30 day trial period.

After this period, if you want to continue using the program you must purchase - **AquaGuard 2 Activation Key CD** and load this program to your AquaGuard 2 Trial software program to restore full functionality for a life span of 15 years. If the Activation Key was purchased together with the Controller, you will find the key already on the CD.

Monitor and Control the Cooling Water Treatment Program on remote sites

Real Time Monitoring of all functions associated with the controlling system

Security via AquaGuard 2 Activation Key

Graphical and Numeric Interpretation of System Operation

Internal Data Storage for Analysis Purposes

Download of stored data from the controller

Alarms output to mobile phones ensure 24/7 service

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Aquarius Technologies Pty Ltd
AquaGuard
Water Management Control System
For Windows 2000 & XP
Version 2.7.8
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Warning: This program, or any portion of it is copyrighted and protected by U.S. laws and international treaties. Unlawful duplication is prohibited. Violators will be prosecuted to the maxium extent of the law.

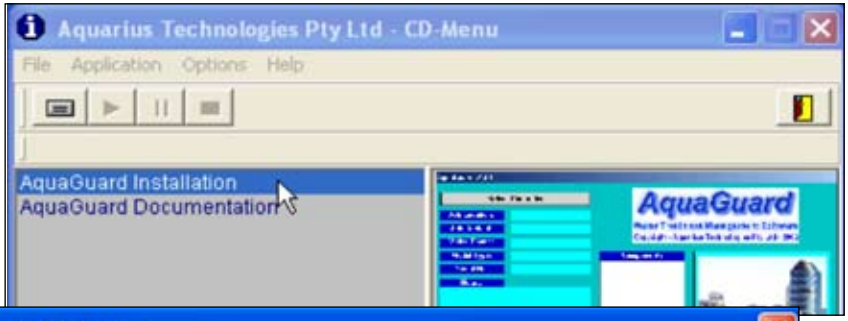
Installation

System Requirements Minimum
Microsoft Windows 2000 or NT running on an IBM PC or compatible.
Pentium II processor
128 MB of RAM
SVGA Display, 16 colour (800x600 res)
200MB of hard disk space
CD Drive + Excel 2003

Recommended
Pentium II processor
256MB of RAM
SVGA display, 256 colour
(1024 x 768 res)
2GB of hard disk space

Installing the Software

(It is advisable to close all applications and restart Windows prior to installing the software).



AquaGuard 2 Setup
AquaGuard 2
Welcome to the installer for AquaGuard 2.
It is strongly recommended that you exit all Windows programs before continuing with this installation.
If you have any other programs running, please click Cancel and

When you place the AquaGuard 2 CD in the CD drive, the installation screen will automatically appear. Follow the installation instructions from there.

1 Installation Guidelines

To run the installation process manually, select the RUN option in the Start menu. In the Run dialog box, type in the following:

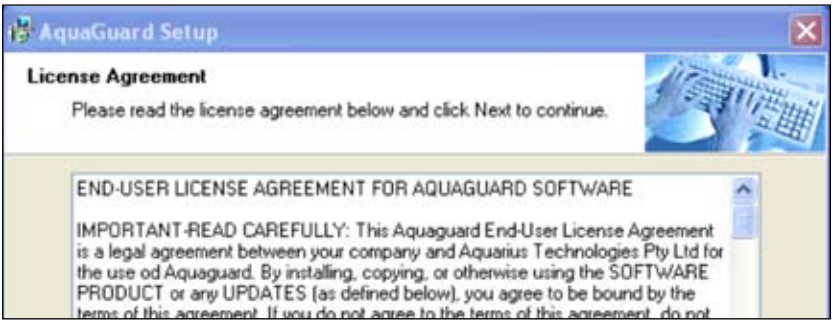
<drive_name>:\setup

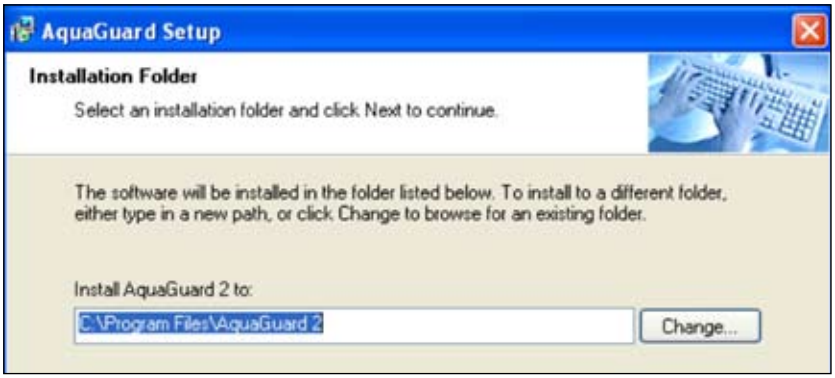
i.e. D:\setup

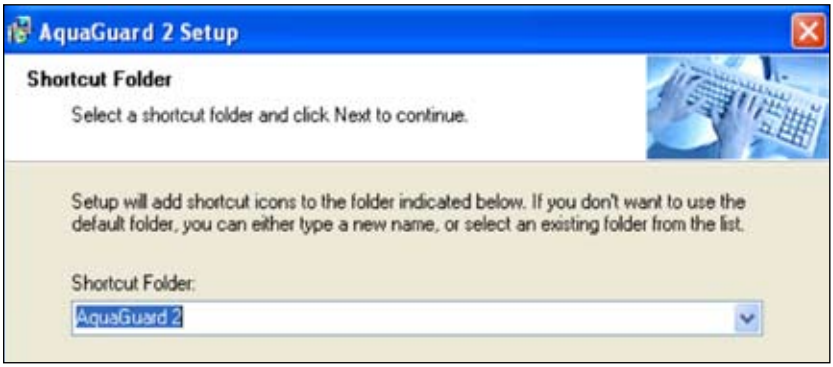
The setup program will load AquaGuard 2 program onto the PC and load typical Excel template programs, and load the shortcut icon onto the desktop.

CWT_GraphsSI.xlt for cooling water treatment or SP_graphsSI.xlt for swimming pools are Excel template spreadsheets which have been designed for easy importation & reporting of data for full analysis.

Trend Charts, Dosage Profiles, Corrosion Charts, and a Data Log Summary are automatically produced after the Setup sheet has been completed and data downloaded and imported.


AquaGuard Setup
License Agreement
Please read the license agreement below and click Next to continue.
END-USER LICENSE AGREEMENT FOR AQUAGUARD SOFTWARE
IMPORTANT-READ CAREFULLY: This Aquaguard End-User License Agreement is a legal agreement between your company and Aquarius Technologies Pty Ltd for the use od Aquaguard. By installing, copying, or otherwise using the SOFTWARE PRODUCT or any UPDATES (as defined below), you agree to be bound by the


AquaGuard Setup
Installation Folder
Select an installation folder and click Next to continue.
The software will be installed in the folder listed below. To install to a different folder, either type in a new path, or click Change to browse for an existing folder.
Install AquaGuard 2 to:
C:\Program Files\AquaGuard 2
Change...


AquaGuard 2 Setup
Shortcut Folder
Select a shortcut folder and click Next to continue.
Setup will add shortcut icons to the folder indicated below. If you don't want to use the default folder, you can either type a new name, or select an existing folder from the list.
Shortcut Folder:
AquaGuard 2

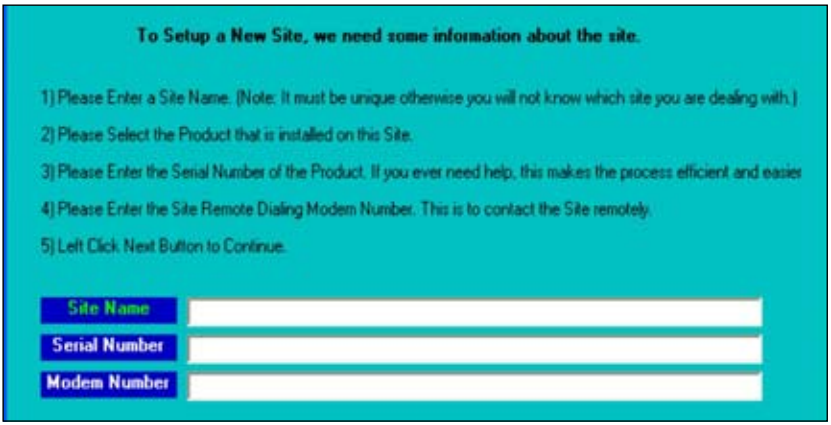
AquaGuard Setup
Ready to Install
You are now ready to install AquaGuard 2.
The installer now has enough information to install AquaGuard on your computer.
The following settings will be used:
Install folder: C:\Program Files\AquaGuard 2
Shortcut folder: AquaGuard
Please click Next to proceed with the installation.

AquaGuard Setup
AquaGuard Installed Successfully
Setup is complete and your software is now installed.
Thank you for choosing AquaGuard 2.
Please click Finish to exit this installer.

1 Installation Guidelines

Setting up AquaGuard 2

Double Click on the AquaGuard2 Icon from the desktop.


To Setup a New Site, we need some information about the site.
1) Please Enter a Site Name. (Note: It must be unique otherwise you will not know which site you are dealing with.)
2) Please Select the Product that is installed on this Site.
3) Please Enter the Serial Number of the Product. If you ever need help, this makes the process efficient and easier
4) Please Enter the Site Remote Dialing Modem Number. This is to contact the Site remotely.
5) Left Click Next Button to Continue.
Site Name
Serial Number
Modem Number

Add Sites

A software wizard exists to enter the data required to add a site to the AquaGuard 2 software. The information required includes site details, site contacts, and telephone data number of the modem associated with the controller

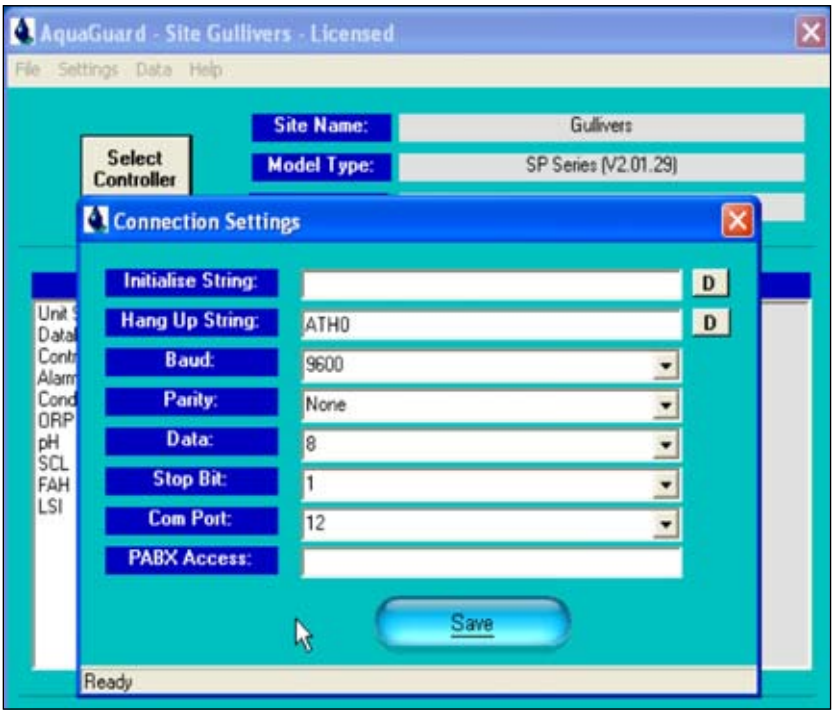
The telephone number of the modem connected to the particular site is exactly as would be manually dialled and must include area codes and international codes (if applicable). Note that it does not include the PABX access number which is set in modem settings. The information can be edited at any time from the Settings>Site menu bar.

To access the wizard, go to Settings press the Add Site control button on the AquaGuard 2 main screen.

Set Communication Settings

Before communications can commence to a site, the communication parameters of the modem need to be set. This information is set by the Settings>Modem Settings sub menu from the main menu bar.

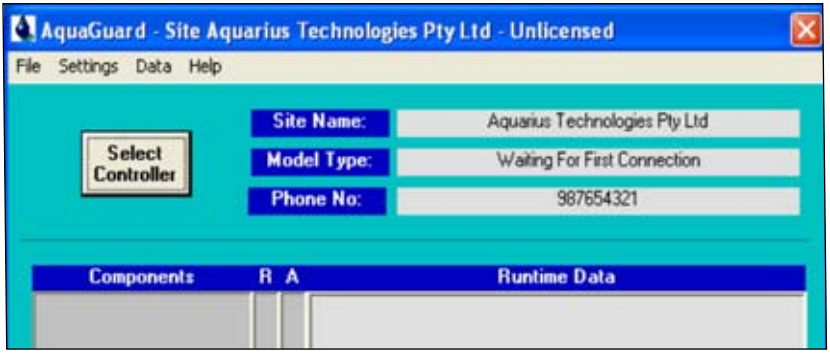
Aquarius has optimized settings for the Sony GSM modem and these settings should not need to be modified where a Sony GSM is installed. For other modems, consult an experienced technician for correct modem settings for the particular modem model.



1 Installation Guidelines

Connecting to Sites -

Double Click on the AquaGuard 2 Icon from the desktop.
Select the Site to be connected to via the Select Controller button.
Select whether the site is to be connected remotely or locally and depress the Connect button.
Refer to the screen display on page 10 for location of controls within the window.
If the connection is via modem, approximately 30 seconds will elapse as the remote site is being called and communication is being established. Status of the connection is displayed at the bottom left hand corner of the AquaGuard 2 window. Typical displays and their interpretation are as follows:



Modem Initializing -

AquaGuard 2 sends a modem initialization string to the modem to ascertain if the modem is ready and to place it into a defined mode. If the modem responds affirmatively, AquaGuard 2 will move onto the next phase otherwise an error message will be displayed alerting the operator that the modem could not be initialized.

Dialling the GSM Number -

The dialling number status message indicates that the number stored in the site communications settings has been dialled. If the modem at the controller cannot be contacted, a time out will occur with the operator being appropriately notified.

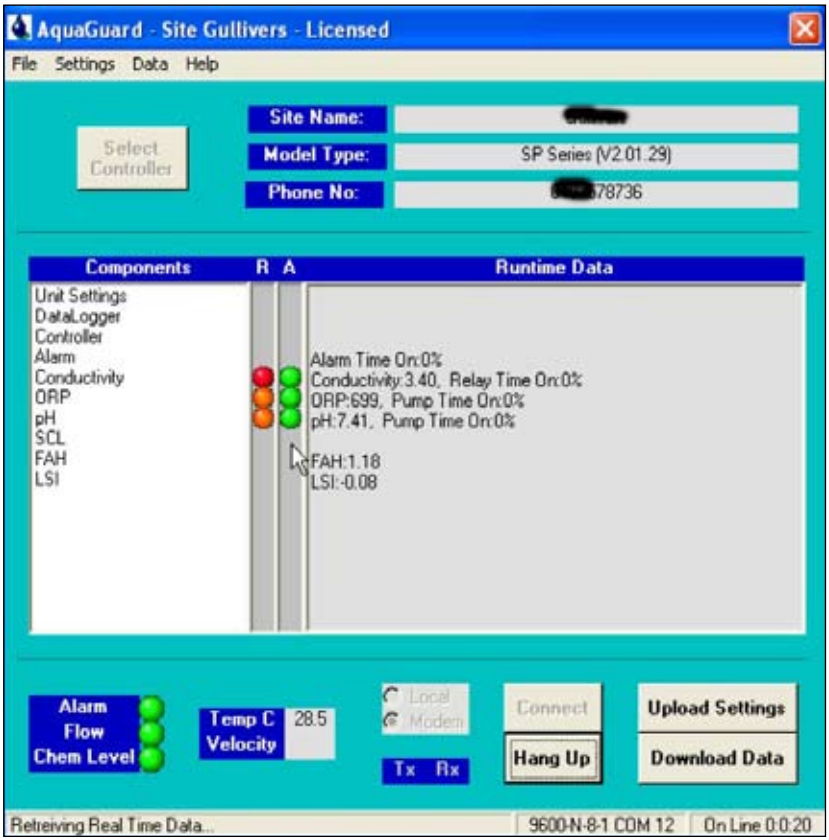
Dialling the Controller Number (Carrier Detected)

When the modem connected to the controller answers the incoming call, AquaGuard 2 senses this and reports that a carrier has been detected. This message will be present until communication at the required baud rate is detected. If a correct connection cannot be established, a time out will occur with the operator being appropriately notified.

Waiting Real Time Data -

When AquaGuard 2 is connected to the remote site, an interrogation will be made to retrieve settings data. While the interrogation is taking place this message will be displayed.

Ready - Successful connection to the site has been made.



Monitoring of Real Time Data

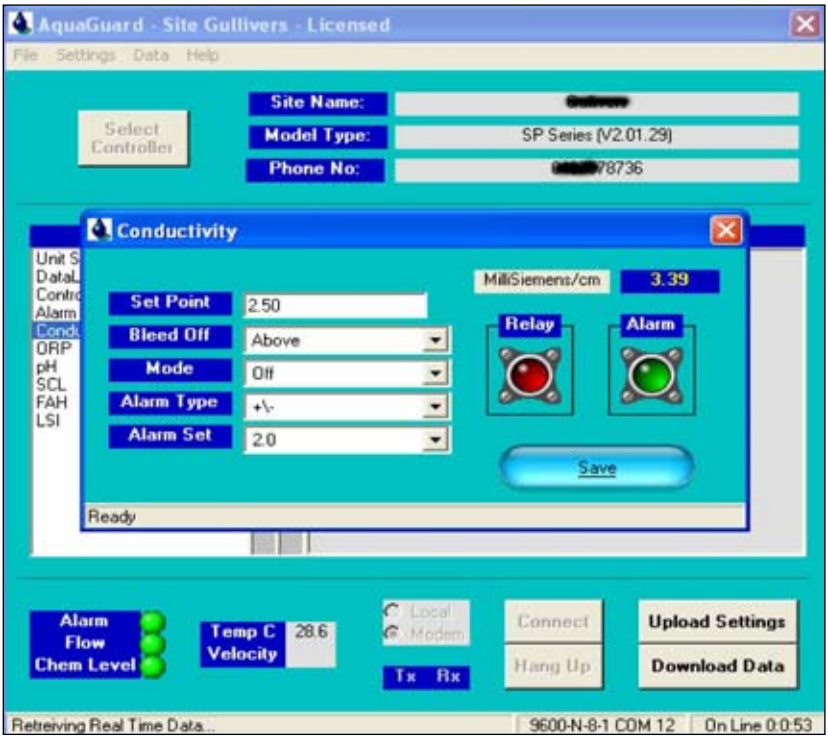
Once the connection has been made; flow, alarm, and tank status (if applicable) is displayed in the bottom left hand corner and indicated via green or red status boxes. Sensor data can be displayed by 'clicking' the particular parameter in the middle of the screen. The screen printout at the bottom of page 3 shows a typical presentation provided from an ORP and Conductivity Cooling Tower Controller. Note that the data for each sensor includes the settings data and the current readings from the sensor. This data is updated approximately every 5 seconds.

2 System Configuration

Changing Water Treatment Parameters

The list of available functions pertaining to the connected site are displayed in the middle of the AquaGuard 2 main window. Any of these water treatment parameters can be altered and uploaded to the connected site. To accomplish this, perform the following steps:

- Click on the particular function which requires changing (i.e. Conductivity)
- Change the setting or settings for the function which require changing (i.e. Change the set point and/or alarm values for Conductivity)
- Press the **SAVE** button within the function window, you will be asked to confirm your selection - if OK select YES if not OK select NO and redo. Wait until the software responds with a **"Save Complete"** message at the bottom left hand corner of the function window.

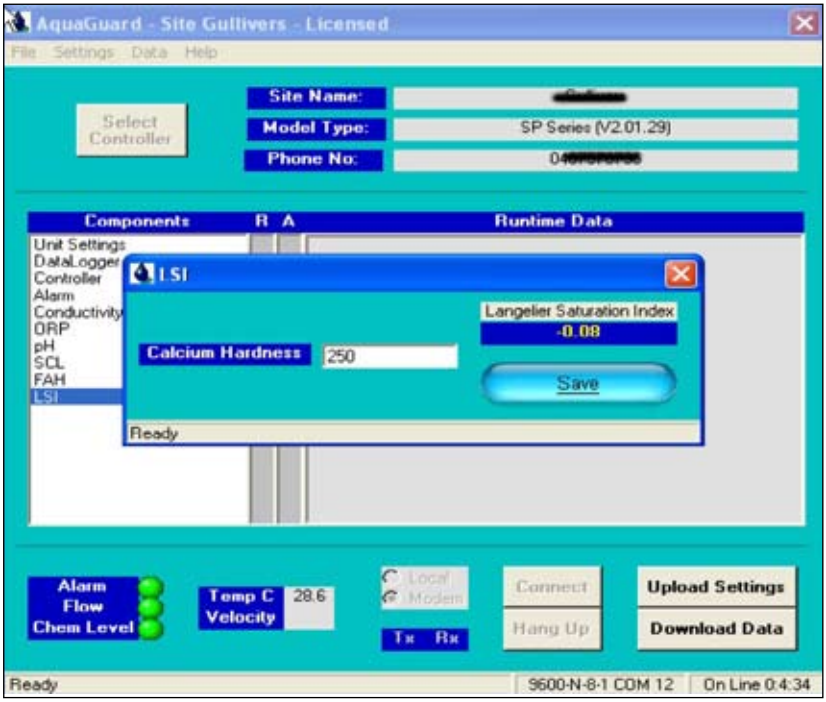


Repeat for other functions which require changing.

Pressing the **UPLOAD SETTINGS** control button will allow for multiple changes, and the new data will be transferred via the connection to the site controller.

Note 1:- To enable LSI to calculate accurately - current values for Calcium Hardness need to be frequently entered to the controller - see screen opposite

Note 2:- On Swimming Pool operation for FAH to calculate accurately - the level of cyanuric acid need to be added to FAH screen, similar to Calcium Hardness above.



Downloading Data

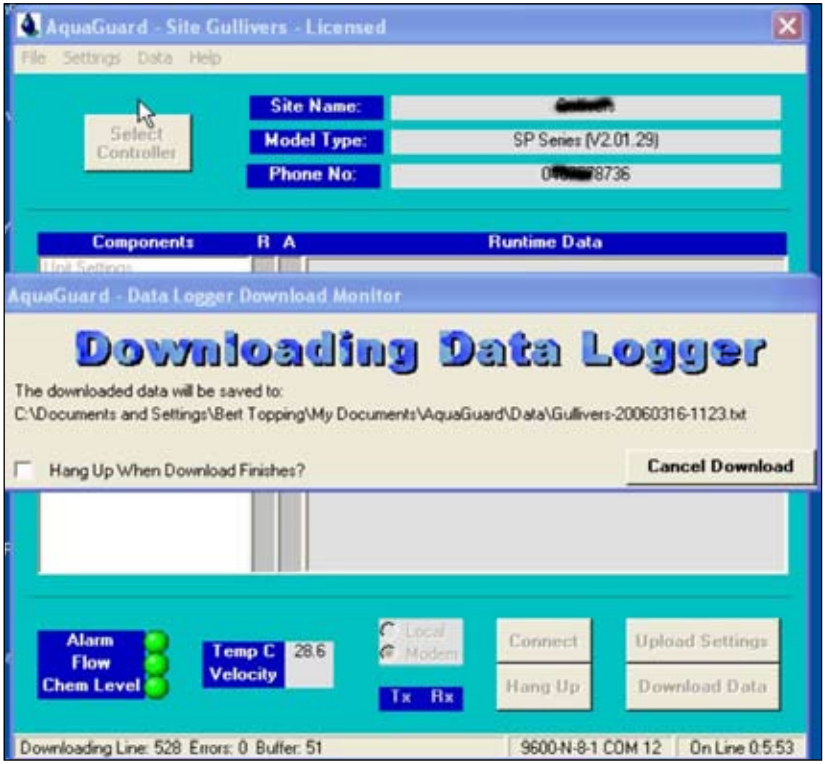
Internally logged data from the connected site controller can be downloaded at any time by pressing the **DOWNLOAD DATA** control button. Wait until download is completed. To complete the data transfer, perform the following steps:

The data downloaded is saved to a file for that controller ID automatically. At this time, messages in the bottom left hand corner of the AquaGuard 2 main screen will indicate the status of the download.

At the completion of the download, the status message will return to READY. The downloaded data will be stored in the file nominated and can be accessed via the appropriate Excel Template program to automatically produce the graphs and site summary reports.

The downloaded data is also appended to the sites internal database for future viewing and reporting as required.

Refer to the section on viewing and reports on the particular site database for details on these features.



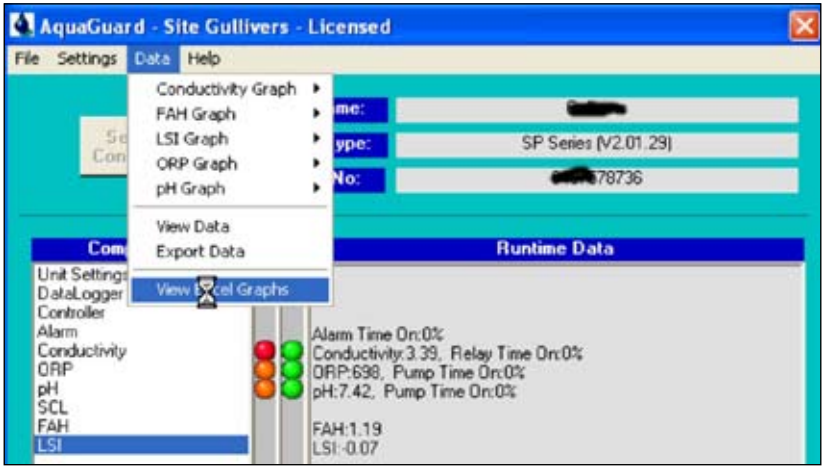
Using the Excel 2003 Templates for Reports of Data Summary, Trend Charts and Graphing

Aquaguard 2 has a suite of Excel Templates, with macros to import data log, and produce a Data Summary for 1 day, 1 week, and 1 month, plus Trend Charts or graphs of data logged also for 1 day, 1 week, and 1 month.

The Template contains a historical database of the data downloaded from a controller and history can be viewed by changing the date in **Data Summary sheet - Cell xxx**

Templates are set up for:-

1. **Cooling Water Treatment** as CWT_GraphsSI.xlt where SI units are used or CWT_ GraphsUS.xlt where US units are used.
2. **Swimming Pool Disinfection** as SP_graphsSI.xlt for SI units or as SP_GraphsUS.xlt for US units.



2 System Configuration

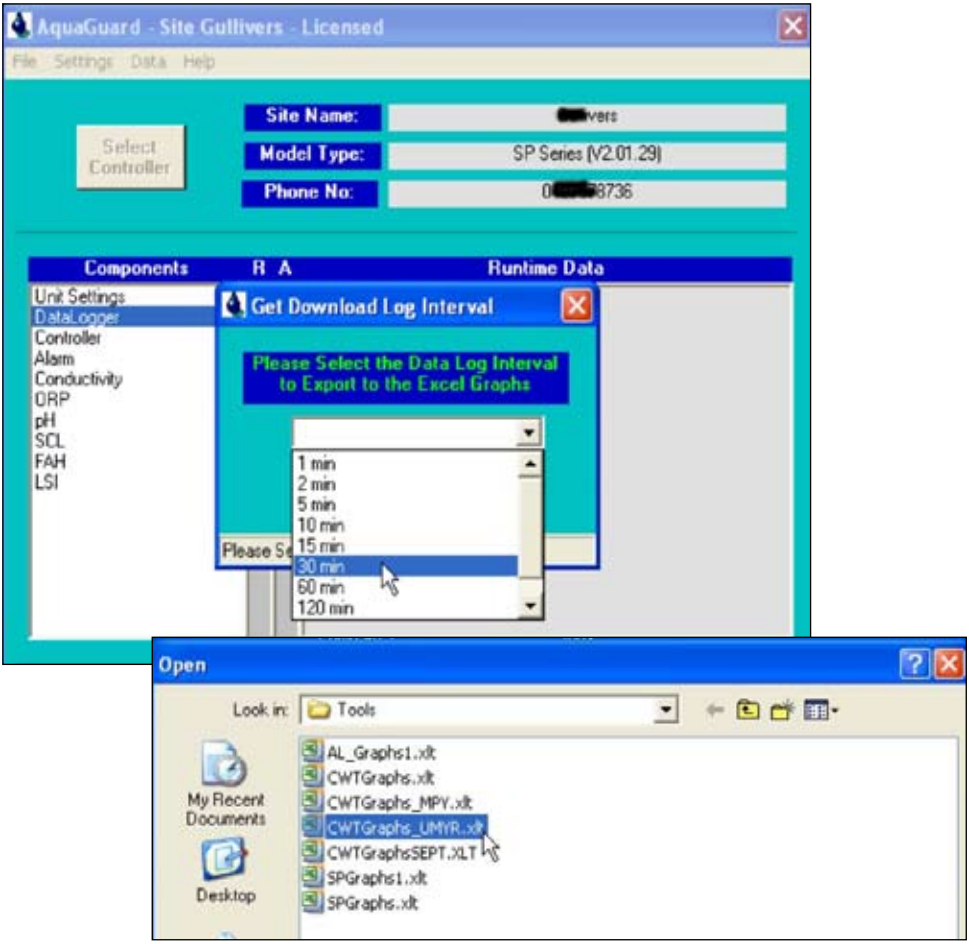
Procedure

After the data download has completed - select **View Excel Graphs -** then you will be asked to select the **Download Data Interval** required for the graphs, normally at 30 minute intervals as shown in the opposite screen.

The program selects only those lines of data for the time period selected to ensure time spacing harmony in trend charts.

Next you will be requested to select the most suitable graphs template from the Tools directory in AquaGuard 2.

Select **CWT_graphsSI.xlt** if your data is in SI units, Cooling Water Treatment and corrosion is also a measured and logged function.

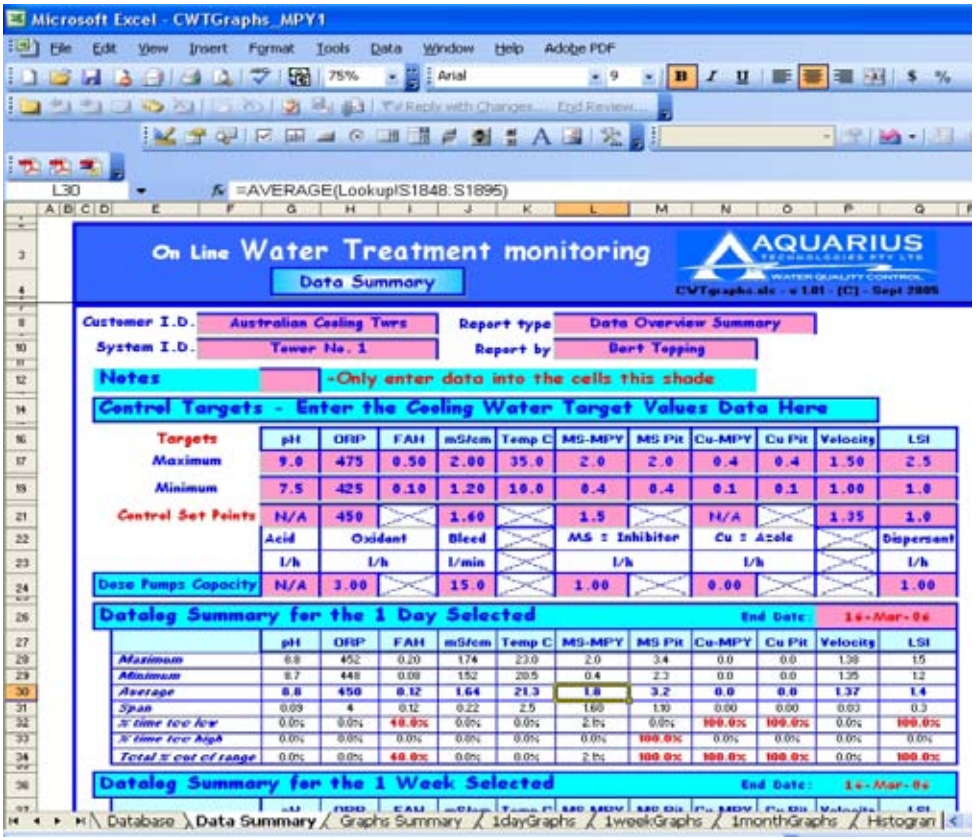


Using the Excel 2003 Templates for Reports of Data Summary, Trend Charts and Graphing

The program using macros loads the data into the selected Template e.g. CWT_GraphsSI.xlt. New templates can be created or modified templates can be saved for future use

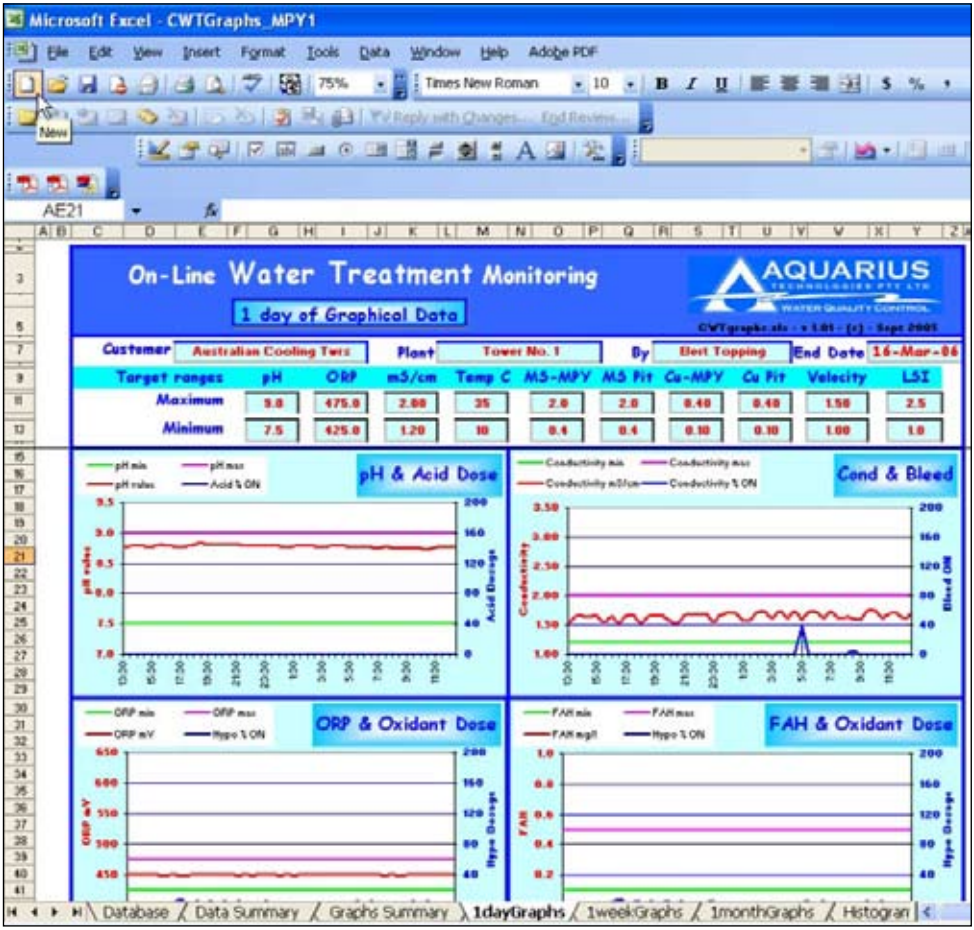
Next you are requested to fill in the site details - into the **Data Summary Sheet** to customise your report.

Example of the Data Summary Sheet - CWT_GraphsSI.xlt

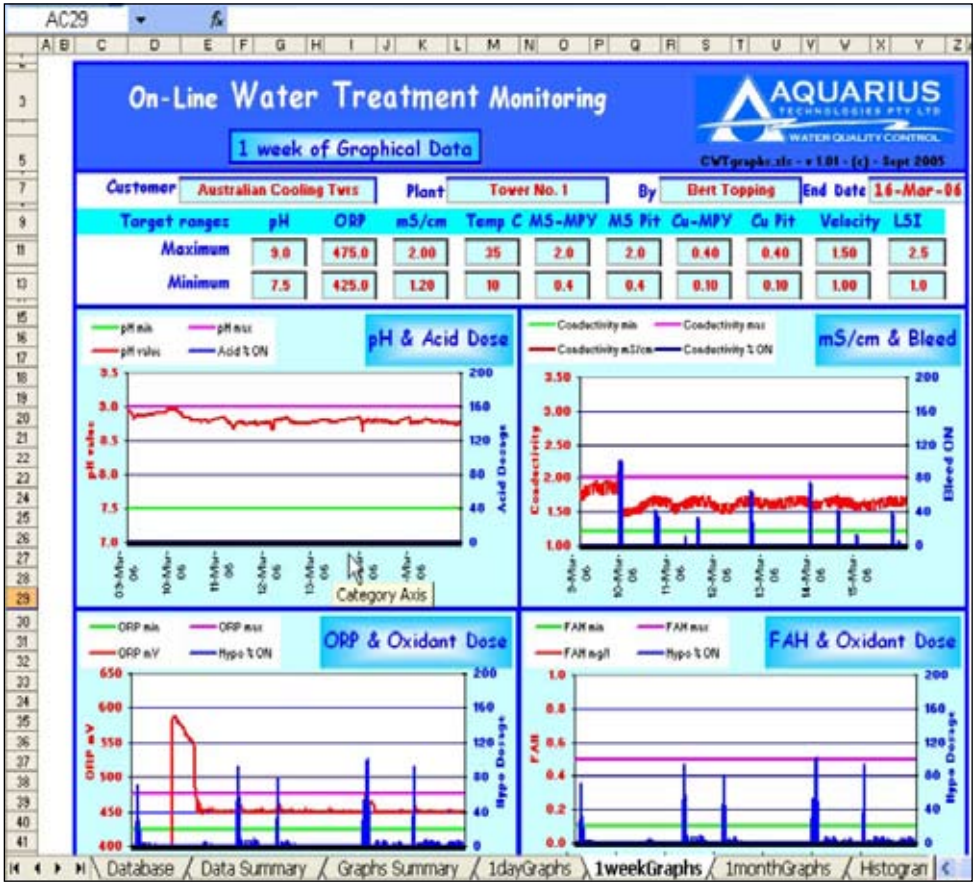


2 System Configuration

Example of the 1 Day Trend Charts - CWT_GraphsSI.xlt

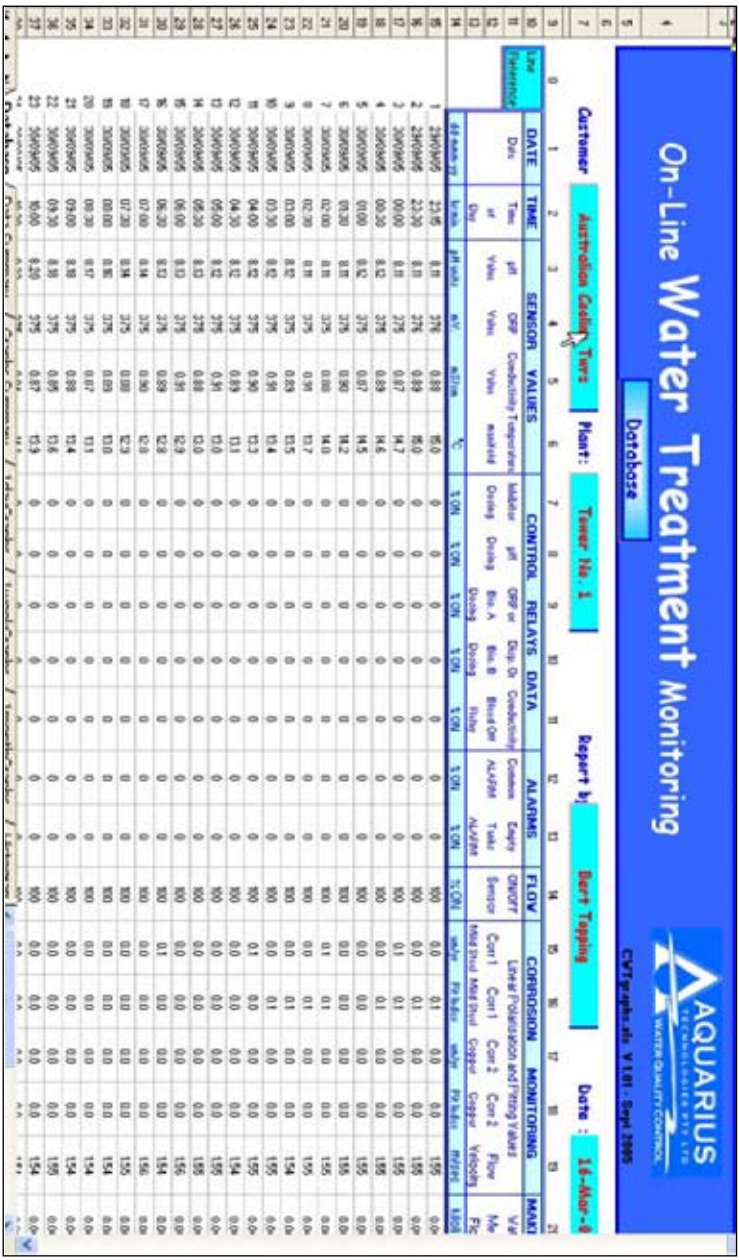


Example of the 1 Week Trend Charts - CWT_GraphsSI.xlt



2 System Configuration

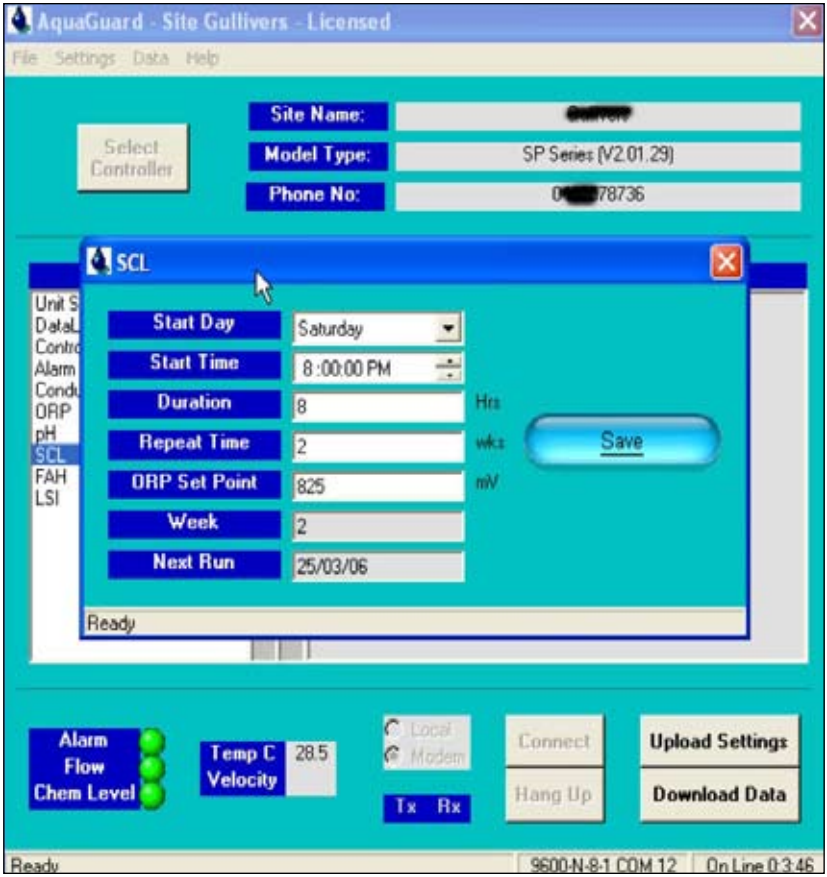
Example of the Database in Excel Template - CWT_GraphsSI.xlt


On-Line Water Treatment Monitoring
Database
AQUARIUS
Customer
Australian Cooling Towers
Plant:
Tower No. 1
Report by:
Bert Topping
Date :
16-Mar-0
CWTgraphs.xls V 1.01 - Sept 2005
Line Description
DATE
TIME
SENSOR VALUES
CONTROL
RELAYS
DATA
ALARMS
FLOW
CORROSION MONITORING
MAKE
Date
Time
pH
ORP
Conductivity
Temperature
Inhibitor
pH
ORP or
Disp. Or
Conductivity
Common
Empty
ON/OFF
Linear Polarisation and Pitting Values
Vol
Dosing
Dosing
Bio. A
Bio. B
Biocide
ALARM
Toilet
Sensor
Corr 1
Corr 1
Corr 2
Corr 2
Flow
Me
Dur
Volts
Volts
Volts
mA/mV
Dosing
Dosing
Dosing
Dosing
Ruller
ALARM
%ON
%ON
%ON

Remote start up of Superchlorination or Disinfection

A unique function is the ability to remotely start up and program a disinfection or superchlorination routine. Should a LDB detection be advised from Microbiological Laboratory then a remote disinfection start up can avoid drastic consequences on cooling systems.

For Swimming Pools, the Superchlorination is normally used as a monthly routine to rid the pool of chloramines which lead to odours, eye stinging, and poor disinfection.



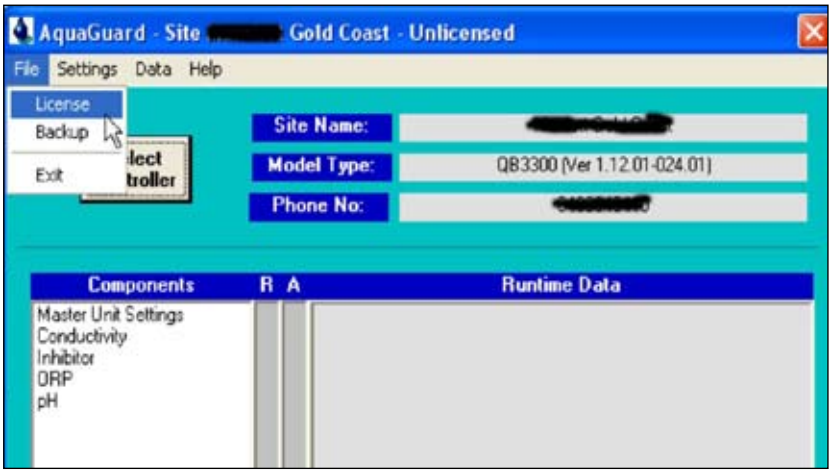
2 System Configuration

Add Or Delete an Activation Key (license)

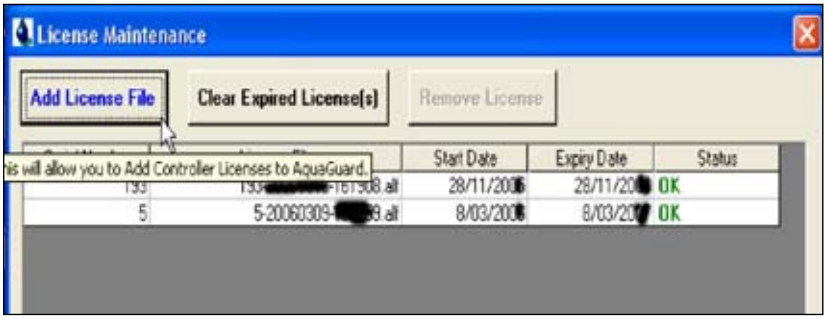
AquaGuard 2 allows for a 30-day Free Trial period. After this period, an Activation Key is required to be purchased to allow the program to continue functioning.

The Activation Key CD or program delivered by email needs to be loaded to the trial program as shown in the **Add Activation Key** opposite.

The Activation Key allows for security, as the key will only activate a particular controller. But the key can be installed into multiple computers within a company.



Delete Activation Key - The following routine allows for erasing or deleting Activation Keys from a particular computer as in the screenshot opposite.



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Fax: + 617 3274 4736
email: techsupport@aquariustech.com.au

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PO Box 71
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Australia

Delivery Address:
1/21 Richland Avenue
Coopers Plains Q 4108
Australia

Trading hours:
08:00 to 17:00 Monday - Friday
Australian EST

Record details of your controller here:

Controller:
Serial Number: .....

Date Installed: .....

Pumps:
1 - serial number .....

2 - serial number .....

3 - serial number .....

4 - serial number .....

5 - serial number .....

6 - serial number .....

AQUARIUS
TECHNOLOGIES PTY LTD
WATER QUALITY CONTROL